

REMARKS

In the patent application, claims 1-26 are pending. In the final office action, claims 1, 17-19, 23, 24 and 26 are rejected, claims 20-22 are allowed, and claims 2-16 and 25 are objected to but would be allowable if rewritten in independent form.

Applicant has amended claims 2, 6 and 25 to put claims 2-16 and 25 in condition for allowance.

Applicant has amended claims 1, 17 and 23 to include the limitation that the code-division multiple access communications are single-carrier code-division multiple access communications. The support for the amendment can be found at p.1, lines 24-28; p.2, lines 25-29. No new matter has been introduced.

102(b) CLAIM REJECTION

At section 1 of the office action, claim 1 is rejected under 102(b) as being anticipated by *Kaiser* (U.S. Patent No. 6,188,717). The Examiner states that *Kaiser* discloses a CDMA communications method as claimed.

Claim 1 of the present invention

The present invention, as claimed in claim 1, is concerned with single-carrier code division multiple access communications. Claim 1 has the limitations of:

adding a plurality of prefixes to the data streams in symbol-level for providing a plurality of further data streams indicative of the prefix-added data streams; and

spread filtering the further data streams with a plurality of spread code signals for providing a plurality of spread data streams in a plurality of code channels prior to said summing process.

***Kaiser* is irrelevant to the present invention**

- 1) *Kaiser* is concerned with multi-carrier OFDM communications, whereas the claimed invention is concerned with single-carrier CDMA communications.

2) In *Kaiser*, the spread signal in chip-level is passed through an OFDM modulator (Figure 5, block 15) and the multi-carrier modulated OFDM symbols are cyclically extended by a guard interval (Figure 5, block 16; col.6, lines 45-49). As such, the CP is added in the time-domain. This means that CP is not added in symbol-level. In contrast, the claimed invention is concerned with adding the prefixes to the data streams in symbol-level. The present invention has nothing to do with an OFDM modulator, OFDM symbols or multi-carrier modulated OFDM symbols.

For the above reasons, *Kaiser* is irrelevant to the present invention. Applicant respectfully requests that the Examiner withdraw the 102(b) rejection.

103(a) CLAIM REJECTION

At section 2, claims 17-19, 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable by *Larsson* (U.S. Patent No. 6,842,487), in view of *Kaiser*.

In rejecting claim 17, the Examiner states that *Larsson* discloses a plurality of first modules for adding a plurality of prefixes to the data stream in symbol-level for providing a plurality of prefix-added data streams and a plurality of second modules for filtering the prefix-added data streams by a plurality of code signals prior to the summing process. The Examiner admits that *Larsson* fails to disclose spreading, but points to *Kaiser* for disclosing spreading.

In rejecting claim 17, the Examiner alleges that the claimed chip-level code stream is inherent in orthogonal frequency division multiplexing.

Claim 17 of the present invention

Claim 17 is concerned with a transmitter for use in single-carrier code division multiple access communications wherein a plurality of data streams in symbol-level for carrying a plurality of transmit symbols are combined in a summing process into at least one chip-level code stream for transmission. The transmitter has the following limitations:

a plurality of first modules, for adding a plurality of prefixes to the data streams in symbol-level for providing a plurality of further data streams indicative of the prefix-added data streams; and

a plurality of second modules, responsive to the further data streams, for spread filtering the prefix-added data streams by a plurality of spread code signals prior to said summing process.

Larsson is irrelevant to the present invention

- 1) *Larsson* discloses a multi-carrier OFDM communications system, whereas the claimed invention is concerned with a single-carrier CDMA communication system.
- 2) In *Larsson*, prefixes are added (step 1230 of Figure 12) after the received symbols are converted from frequency domain to time domain (step 1210). The symbols are then transmitted (step 1235). No spreading is carried out in such a multi-carrier system. In contrast, in the claimed invention, spreading is carried out after prefixes are added to the data stream in the symbol level.

For the above reasons, *Larsson* is irrelevant to the invention as claimed.

Kaiser is irrelevant to the present invention

- 1) *Kaiser* is concerned with multi-carrier OFDM communications, whereas the claimed invention is concerned with single-carrier CDMA communications.
- 2) In *Kaiser*, the spread signal in chip-level is passed through an OFMA modulator (Figure 5, block 15) and the multi-carrier modulated OFDM symbols are cyclically extended by a guard interval (Figure 5, block 16; col.6, lines 45-49). As such, the CP is added in the time-domain. This means that CP is not added in the symbol level. In contrast, the claimed invention is concerned with adding the prefixes to the data streams in the symbol-level. The present invention has nothing to do with an OFDM modulator, OFDM symbols or multi-carrier modulated OFDM symbols.

For the above reasons, *Kaiser* is also irrelevant to the invention as claimed.

Larsson in view of Kaiser does not render claim 17 obvious

Because both the cited *Larsson* and *Kaiser* references are irrelevant to the invention as claimed in claim 17, it would be no incentive to one skilled in the art to combine two references in multi-carrier OFDM systems in order to come up with an invention regarding a single-carrier CDMA system.

Applicant respectfully requests that the Examiner withdraw the 103(a) rejection.

CONCLUSION

In the patent application, claims 20-22 are allowed. Claims 2-16 and 25 have been amended to be in condition for allowance. As amended, claims 1, 17-19, 23, 24 and 26 are also allowable over the cited references.

Early allowance of all pending claims is earnestly solicited.

Respectfully submitted,



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